



Dobinsons Hydraulic Bump Stops

HBS45-008FK

Please leave this manual with the vehicle owner once finished.

Install Time - 8-10 hours

Tools Required

- Floor Jacks and chassis stands
- Spanners, socket sets, hammer
- Welder
- Angle Grinder with flap disk, a smaller hand polisher/sanding tool will also help
- Drill and 3" hole saw or 76- 78mm hole saw (alternatively a plasma cutter)
- 10mm drill bit
- Black Spray Paint / Zinc Rich spray paint

Thankyou for purchasing Dobinsons hydraulic bump stops. Dobinsons hydraulic bump stops utilize a 40mm shock absorber rod in conjunction with a 60mm diameter piston. This high quality hydraulic bump stop provides smooth bottom out control without excessive rebound associated with regular rubber and polyurethane bump stops. Dobinsons hydraulic bump stops have a M66 x 1.5 threaded high strength steel body for easy adjustment. It is important to ensure that the bump stops are installed and adjusted correctly and safely to provide optimum performance.

Always check your local federal, state or territory laws before installation to ensure compliance for road registered vehicles - if engineering approval is required an engineer should be consulted before install.

Safety Warning:

When fitting aftermarket replacement parts, it is important to note that your vehicle may behave and handle differently. Always follow relevant road rules and always use safe driving and vehicle operating practices.

These bump stops are pressurized with high pressure nitrogen gas and should never be heated or opened whilst pressurized. These bump stops should only be opened by a qualified technician. Take extreme care when de-gassing these bump stops and ensure that the bump stop is in the upright position for 10 minutes to allow the oil to settle to the bottom as there is no physical barrier between the oil and gas which may cause oil to escape from the shradar valve. Always cover the shradar valve with a cloth when de-gassing.

Installation Warning:

These bump stops should be installed only by a qualified technician. Attempts to install these products without knowledge or experience may jeopardize the safety of the vehicle. As bump stops are a universal product that can be installed in many applications it is the installer and engineers responsibility to ensure correct and safe installation. These instructions provide only a basic guideline for installation and do not cover vehicle disassembly or re-assembly. The installer is responsible to insure a safe and controllable vehicle after performing modifications. Do not perform test drives on public roads with partially completed installations.

Always double and triple check your work before use.

Selection of Bump stops

For the rear of Nissan Patrols with 2 – 4 inch lift kits the 57mm travel HBS56-005 bump stop is recommended.

Selection of Rod End

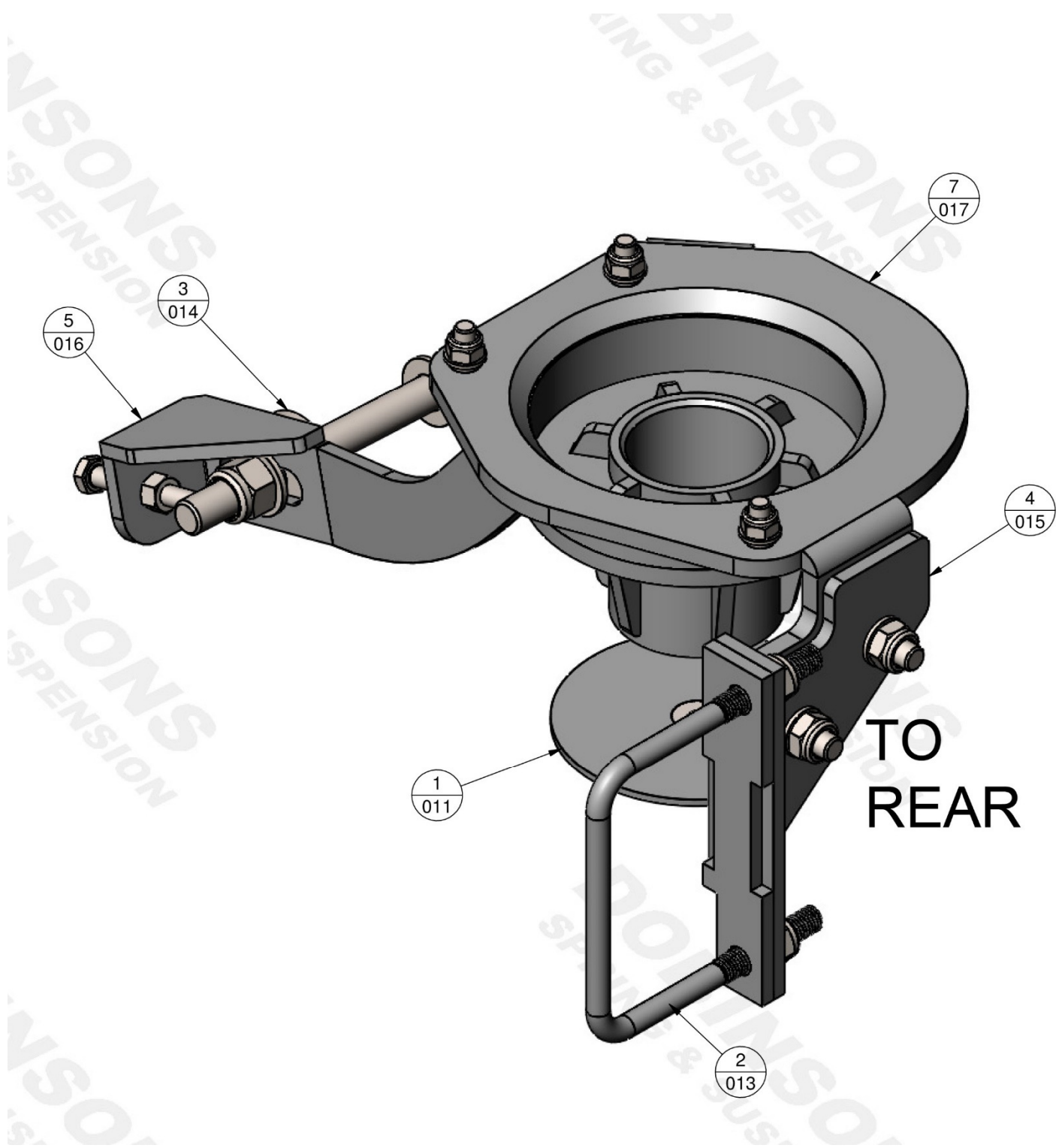
Dobinsons Hydraulic bump stops are also provided with a hard nylon and rubber rod ends. These ends are interchangeable by removing the 2 lower Allen head bolts and swapping the ends. Use a small amount of Loctite when re-fitting the bolts. The rubber end will be more suitable for street driven vehicles and will be much quieter but wear quicker whereas the hard nylon end will be louder but will not wear as fast.

Setup and Installation

IMPORTANT NOTE: Before commencing installation the vehicle must have the rest of the suspension components fitted, adjusted and aligned correctly. This is so that the vehicle is sitting at its finished ride height with the Panhard rod and castor adjustment products fitted and aligned correctly and will ensure that the bump stops contact the striking pad correctly at full compression.

Always take extreme care not to damage the bump stop thread.

This kit should not be fitted to vehicles with coil spring wire diameter larger than 21mm.



<p>1. Firstly apply a small amount of lubricant to the thread such as light oil or wd40 and thread the bump stops into the mounts to ensure they screw in correctly. Install one locking ring below the mount. The upper is not required.</p>	
<p>2. Using safe and proper workshop practices raise the vehicle and support with chassis stands. Remove the wheels, coil springs, rubber coil seats and shocks.</p>	

3. The Dobinsons hydraulic bump stop kit are designed to work in conjunction with the original under chassis rubber bump stop. This outer bump stop height must be set correctly first. Lower the vehicle onto the original outer bump stops and check clearances on all contact areas such as diff housing, shock absorber fully compressed measurements, coil bind and all other areas that may cause issues. If required space the outer bump stop by disconnecting the battery and tack welding some flat steel to the diff striker. For most vehicles with shock absorbers and lift kits 3" lift or less there should not be any need for bumpstop extensions. With the outer original bump stop heights set the hydraulic bump stops can be screwed full into the mounts.

4. Hold the bumpstop mount assembly in place as seen in the diagram above and loosely install the top 3 M8 countersunk bolts and nuts and do up finger tight.



5. With the mount pushed upward mark the rear holes through the rear braced section of the coil tower.



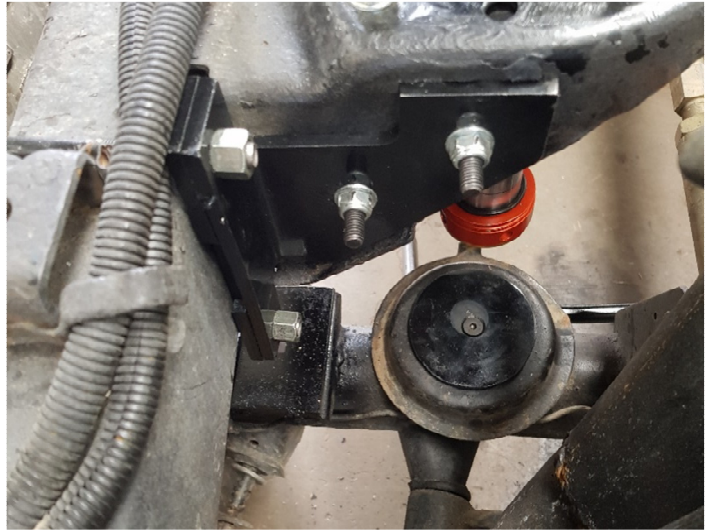
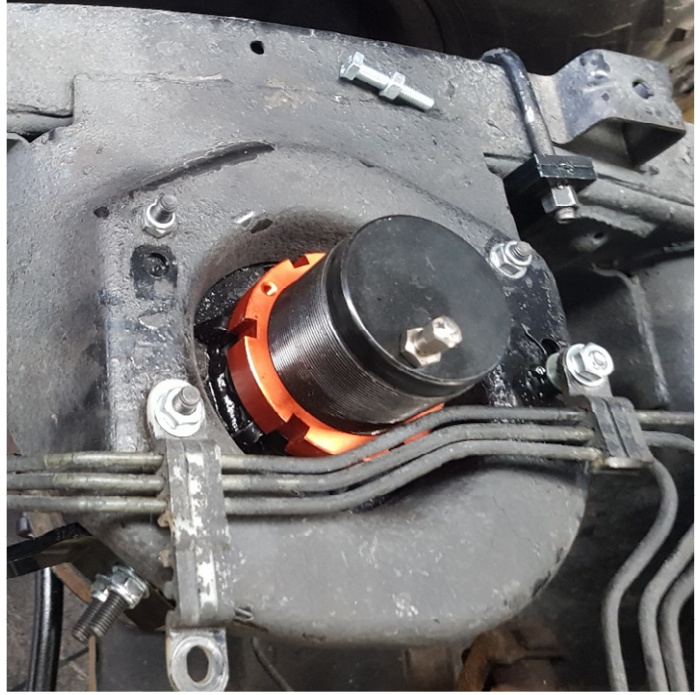
6. Remove the mount and Pilot drill the holes and drill to suit the M10 bolts supplied. A right angle drill attachment may be required. Clean away the drill shavings and paint bare metal surfaces to prevent rust. Repeat on both sides



7. Install the lower strike plate to the lower coil seat with the countersunk M10 bolt, sliding up the washer and nyloc nut from underneath and tighten.



8. Loosely install each bump stop mount to each side, along with the rear brace bracket (item 4 in diagram above) with the U bolt around the outside of the chassis through the bracket and installing the washers and nyloc nuts supplied. Bolt the main bump stop mount through the drilled holes in the coil tower brace onto the newly install rear bracket using the countersunk M10 bolts, washers and nyloc nuts supplied.



9. On one side at a time, remove the front bolt of the upper trailing arm. Install the longer 14mm bolt supplied with the bolt head on the inside through the arm mount. Then on the outside of the arm mount add the 14mm thick spacer supplied, then the correct side forward running brace then the washer and nyloc nut. Loosely. Install the M8 x 55mm bolt through the angled brace at the front of the arm with the locking nut supplied.





10. Loosely bolt the front mount to the main bump stop mount using the countersunk bolts, washers and nyloc nuts supplied.



11. Set the bump stop height and lock off the lower locking ring. With the vehicles full weight on the bump stops, the hydraulic bump stop must still have 12mm of exposed shaft. This will close up a little more during large impacts but will not fully bottom the hydraulic bump stop and ensure all remaining force is transferred through the factory rubber bumpstop.



12. Tighten all nuts on bolts aside from the 14mm trailing arm bolts - keep these finger tight for now/

<p>13. Tighten the locking bolt and nuts against the 14mm bolt on the front brace to keep a small amount of tension on the brace and with the vehicle sitting approximately at ride height tighten the 14mm nuts in the trailing arms.</p>	
<p>14. Trim the inner step section from the upper coil seat rubbers and stretch into place.</p>	
<p>15. Re-install the coil springs and shock absorbers and other items removed during installation.</p>	
<p>16. Re-check all fasteners after 100klms.</p>	

Maintenance

Dobinsons hydraulic bump stops are completely rebuildable and tunable. The bump stops should be kept clean and the locking rings inspected regularly to ensure they are tight. For non-race applications the bump stops can be inspected periodically and at regular service intervals for signs of oil leaks, damage to the shaft and gas pressure. For race applications the bump stops should be inspected before and after each meet for signs of damage or oil leaks. Gas pressure should be checked before each race meet. For severe race applications it is recommended to rebuild and service the bump stops periodically.

Warranty

Dobinsons hydraulic bumpstops have a limited 2 year warranty for non-race vehicle applications from date of original sale against faulty manufacture. For full warranty terms and conditions for hydraulic bump stops please visit www.dobinsonsprings.com